UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VII
726 MINNESOTA AVENUE
KANSAS CITY, KANSAS 66101

FEB 7 1986

OFFICE OF
THE REGIONAL ADMINISTRATOR

Mrs. Barbara J. Sabol
Secretary
Kansas Department of Health and Environment
Forbes Field, Building 740
Topeka, KS 66626

Dear Mrs. Sabol:

Thank you for the opportunity to review and comment on the second draft of the Vulcan Chemical Company's UIC permit and for your response to our initial set of comments.

Your response to our initial comments addresses many of our concerns. However, I would like to re-address the following points that I believe deserve additional attention:

1. Vulcan Chemical Company describes their abandonment and plugging procedures in detail on page 12 of their December 19, 1984 application. This plugging plan appears to be acceptable for all five of the currently active injection wells. However, we recommend that the permits be modified to specifically reference Vulcan's plugging plan described in their application or, even better, to describe Vulcan's plan in the individual permits. Permits should also contain conditions that provide for future updates of the plan if needed. Sections 40 CFR 144.28(c)(2)(ii) and 144.51(o) show methods used in EPA administered programs to allow flexibility in plugging procedures. The requirement for plugging plans is discussed in 40 CFR 144.28(c), 144.52 (a)(6), and 146.10.

2. We are pleased to learn of your intent to further evaluate establishing a procedure for notification of oil lease operators who file "intent to drill" within the vicinity of industrial waste disposal wells. This should help alleviate the public's apprehension about the movement of contaminants in the Arbuckle formation beyond the area of review and into distant oil producing areas. The recently completed study of the Arbuckle formation by the U.S. Geological Survey should be helpful in your efforts to establish this policy.

3. Although the fluid packer method of mechanical integrity testing used on the Vulcan wells is acceptable under UIC regulations, we believe a pressure test using a retrievable bridge plug or packer may be more reliable and would provide more useful information. Therefore, we suggest a pressure test be required on these wells when the tubing is pulled from the wells for inspection.

Fluid packers are recognized as effective for monitoring and mechanical integrity tests to detect leaks in the upper section of a well; however, the fluid packer system appears to lack sensitivity for detecting casing leaks toward the bottom of a well. In the lower sections of a well, just above the injection zone, pressures inside the injection tubing and in the annulus are likely to be nearly equal. If a casing leak occurred in that area, only a small amount of diesel would be lost from the annulus. These factors could prevent a significant loss of annulus pressure at ground level and reduce the sensitivity of the fluid packer system to detect leaks near the bottom of the well.

The periodic pressure tests and inspections that are conducted on tubing when it is pulled from the wells should be adequate for establishing tubing integrity.

4. The limit of 25 percent loss of annulus pressure for well shut down and reporting to the State appears to be within a reasonable range. You indicate in your comment letter that the well will be taken out of service when there is a drop in annulus pressure greater than 25 percent; however, I don't find that provision in the draft permit. It is recommended that the permit be modified to require that, upon loss of annulus pressure, the injection activities at that well be terminated automatically and no injection recur until a demonstration has been made, to the satisfaction of KDHE, that the cause of the loss of annulus pressure has been discovered and remedied.

5. The draft permits provide injection limitations for certain chemical contaminants, but do not mention limits for pH. Increasing the pH in some acidic wastes should reduce deterioration of exposed casing and other well fixtures. This should also reduce reaction of acidic wastes with carbonates in the Arbuckle formation. We recommend a limitation on pH in injection fluids in the permits.

If you have additional questions or comments, please contact me. The member of my staff who is also familiar with this subject, Mr. Ralph Langemeier, at (913) 236-2815, can provide additional information.

Sincerely,

Morris Kay
Regional Adminsistrator